(*Cotyle rupestris*) to be distinct from the Sand Martin, for which it was then mistaken. He gives an interesting account of its habits, and names it *Hirundo hyemalis*, from its great abundance at Gibraltar in the winter months. The last letter of the series, dated June 15, 1793, has a special interest attached to it from the fact that it was written only eleven days before the death of this estimable man and ardent naturalist. The whole of this interesting series will be published in the Transactions of the Society, and it is hoped, through the kindness of Prof. Bell, in whose hands they now are, that Marsham's letters to White may be added.

NOTES

DURING the last week there has been a goodly talk about education, and Mr. Cross has come to the front in a most unexpected manner, while the modern English Cardinal has been acting as his foil. Cambridge, too, in the shape of Mr. James Stuart, has been active at Nottingham, and the world thinks that the University is active. The truth is, however, that the University is too poor to do anything, and that the Colleges are simply looking on while a private benefactor is providing both with those means of teaching which third-rate institutions on the Continent have possessed to a greater or less extent any time during the present century. Mr. Cross not only foreshadows compulsion, but he shows that we have now a Minister who knows the difference between Education and Instruction. "It is not mere book learning that I am talking of. That is not the object of these schools. It is the school discipline, the training of the mind of the child, the teaching him how to teach himself, the self-control and the self-respect which he gets at school, which do more for him than all the book learning that you put into his head." The Cardinal, on the other hand, defines "Secular Education" as "secular knowledge," and then adds: "Education means the full possession and understanding and enjoyment of the inheritance of faith, which the child has by virtue of his regeneration in baptism." It is clear that the Cardinal, if he means anything, confounds instruction with education as successfully as ninety-nine out of every hundred who talk on the subject confound education with instruction.

AT a meeting of the Entomological Club of the American Association for the Advancement of Science, Mr. C. V. Riley, the secretary, read a paper on "Locusts as Food," in which he gave his own experience in cooking and eating them. On one occasion he ate nothing else for a whole day. He found them to have an agreeable nutty flavour, and especially recommended them deprived of their legs and wing-cases, and fried in butter, and also spoke very highly of a soup made from them. He referred to John the Baptist, who had often been pitied for the scantiness of his fare, locusts and wild honey, and expressed his opinion that he was rather to be envied than otherwise. The writer regarded it as absurd that parties should actually die of starvation, as some had done in the districts where this locust plague had prevailed, while surrounded by such an abundance of nutritious and palatable food.

FROM different settlements on the West Coast of Africa young living gorillas have several times been shipped for Europe under auspices apparently the most favourable. On one occasion, about six years ago, a Dutch merchant at St. Paul de Loanda took the trouble to keep a young male in company with a black boy for some considerable time on the coast, and when the two had become good friends, took passages for them both to Holland. The animal only survived a fortnight from the date of its embarcation, dying rather suddenly, as most others seem to have done, from a kind of depression or home-sickness, not from any well-marked disease. No gorilla, exported as such, has reached Europe alive. Quite recently, within the last month or so, one destined for Hamburg arrived within two days of its journey's end, when it shared the fate of its predecessors. This specimen was, immediately after its death, placed into spirit, and will, we believe, form the subject of a monograph by Dr. Bolau, of the Zoological Museum of Hamburg, from whom we may expect the settlement of several important and doubtful points in the anatomy of the greatest of the anthropoid apes. In about the year 1852, in one of Wombwell's travelling menageries, there was exhibited for some months a monkey very like a chimpanzee. The animal was expert at tricks, and was clad in a grotesque costume. From a daguerreotype photograph in the possession of Mr. A. D. Bartlett, resident superintendent of the Zoological Gardens in Regent's Park, that gentleman was enabled to identify the specimen as one of a young gorilla, and not a chimpanzee. Its face was dark, its arms and legs proportionately larger, its ears very much smaller, and the distance between the eyes greater than in the chimpanzee. A still more interesting instance of the same kind has, however, recently occurred. For the last two years there has been a female "chimpanzee" at the Zoological Gardens at Dresden, named Mafota, which has attracted considerable atention. She was purchased by Herr Schöpff, the Director of the Dresden Gardens, in a very unpromising condition, being much denuded of hair, and covered with an unhealthy skin eruption. Since the animal has been under Herr Schöpff's skilful care, it has become quite a different creature. It has grown very rapidly; surprisingly so. The hair now forms an abundant covering, and the skin is in a perfectly healthy condition. It is quite tame with its keepers, whose boots it is in the habit of taking off and replacing for the amusement of visitors. It performs many other tricks, showing great intelligence. Herr Carl Nissle, an artist, we believe, whilst studying the figure and movements of Mafota, became rapidly impressed with the idea that she is not a chimpanzee at all. Her great size, the numerous black spots on the naked skin of the face, which in the chimpanzee is simply flesh-colour, the black instead of pink hands, the slight webbing between the fingers, and the different expression, with a broader nose, all led him to the conviction that she is a gorilla. He carefully studied the stuffed specimens of the gorilla and chimpanzee, both at Berlin and Lubeck, and, what is more, has had the opportunity of seeing the new Hamburg spirit specimen above referred to. These all confirmed his surmise, towards the complete verification of which we have the affirmative opinion of Prof. R. Hartmann, prosector to the Anatomical Museum of Berlin. So there is strong reason for the belief that Mafota is a gorilla, the first living specimen recognised as such in this continent.

THE following are the hours of the various Introductory Lectures at the London Medical Schools, which will be delivered to-morrow (Oct. 1st), with the names of the respective lecturers:—

HOSPITAL.	LECTURER.	HOUR.
Charing Cross	Mr. Fairlie Clarke	4 P.M.
St. George's	Dr. Barnes	4 ,,
Guy's	Dr. Stevenson	2 ,,
King's College	Dr. Curnow	4 ,,
London	Dr. B. Woodman	3 ,,
St. Mary's	Dr. Randall	3·30
Middlesex	Mr. Lowne	3 ,,
St. Thomas's	Dr. Payne	3 ,,
University College	Dr. Corfield	3 ,,
Westminster	Mr. R. Davy	3 ,,

DR. JAMES BELL PETTIGREW, F.R.S., Lecturer on the Institutes of Medicine at the Royal College of Surgeons, Edinburgh, has been appointed to the Chair of Medicine in the University of St. Andrews, vacant by the death of the late Dr. Oswald Home Bell.

THE following is a list of candidates who have been successful in obtaining Royal Exhibitions of 50*l*. per annum each for three years, and free admission to the course of instruction at the Royal School of Mines, London, and the Royal College of Science in Dublin :—1. School of Mines: John Gray, 21, engineer, Strichen, N.B.; Frederick G. Mills, 14, student, London; Thomas E. Holgate, 20, farmer, Blackburn. 2. College of Science: C. C. Hutchinson, 21, engineer, Leeds; Henry Hatfield, 20, student, Stockport; Thomas Whittaker, 18, clerk, Accrington.

THE term of office of the present Lord Rector of Aberdeen University—Professor Huxley—having nearly expired, the students are already looking out for a successor. Mr. M. E. Grant Duff, M.P., Dr. W. B. Carpenter, Mr. Robert Lowe, and Dr. Alexander Russel, editor of the *Scotsman*, are proposed for election. A report in the *Times* states that the feeling of the majority seems to be in favour of Dr. Carpenter.

THE preliminary North-west African Expedition is expected to leave England for the coast of Africa early in November. General Sir Arthur Cotton and several scientific gentlemen are expected to accompany it. The object in view is to make a survey of the coast of Africa opposite the Canary Islands for the purpose of finding a suitable position for a harbour and commercial and missionary station; to enter into commercial arrangements with the native tribes, and to inquire into their present means of commerce, and the resources of the countries through which it is proposed to pass. To examine as far as practicable the sand bar across the mouth of the River Belta, which it is supposed keeps back the waters of the Atlantic Ocean from flowing into the dry bed of the ancient inland sea, to obtain levels and other necessary information. Mr. Mackenzie, the director of the party, expects to get the friendly support of the most powerful chief of the tribes on the north-west coast of Africa.

THE celebration of the fiftieth anniversary of the opening of the first railway between Stockport and Darlington is attracting the notice of the French papers. A curious fact connected with French railways is that Baron Charles Dupin, who published his celebrated work on Great Britain in 1826, described railways at full length, but abstained from saying a word about motive-power. Baron Dupin, a great geometer and mechanician, declared to the Institute that locomotives could never move, owing to the weakness of their hold on the rails, and that the use of horses could not be dispensed with. Baron Charles Dupin's reputation was so great that the truth of the statement was taken for granted, and in the École des Ponts et Chaussées, the public institution where State engineers are educated at the expense of the Government, in a course of lectures given after 1830, it was said that horses could never be dispensed with. The advantages of locomotion were lectured upon in a free institution which was opened at that time, called the École Centrale des Arts et Manufactures. The professor was the celebrated railway engineer, Perdonnet. Arago was opposed to the boring of tunnels as endangering the health of travellers, owing to the great cold which he anticipated would be felt.

M. LEVERRIER has addressed a circular to the Presidents of the Meteorological Commissions of the departments with reference to the Meteorological Atlas in course of publication for the years 1872, 1873, and 1874. It is intended that this important work shall contain instructions relative to meteorological observations and tables for their reduction; a discussion of thunderstorms which have occurred in the different river-basins as well as over France generally; a *résumé* of the observations made during the three years at the departmental stations; hail charts; the rainfall for the whole of France, by M. Belgrand; and lastly, a series of memoirs on special subjects by French and foreign meteorologists. The price for the large or folio volume will be only eight shillings, representing the price of paper and printing, the printing being undertaken by the Government, and the compilation having been done by the Meteorological Service at the Observatory. The number of copies printed being necessarily limited, persons wishing to purchase the work are required to send a money order to the Secretary of the Association Française, 11, Quai Voltaire, Paris.

DR. GUSTAVUS HINRICHS, Director of the Laboratory of the Iowa State University, Iowa city, has issued a circular, dated August 1875, with the view of organising a system of rainfall observation for the whole of the State of Iowa. He is confident of a start with one rain-gauge in each county of the State, and hopes in a few years to secure the erection of four or five gauges in each county. Printed forms on addressed postal cards will be issued to the observers, who are requested to mail them on the 1st, 11th, and 21st of each month. Thrice a month Dr. Hinrichs will prepare a statement of the rainfall of Iowa for the corresponding ten days, comparing it at the same time with past averages, and forward it to the daily press for publication. Other States will doubtless soon follow the example.

THE Upsala Observatory has published a Circular (No. 6) giving an elaborate discussion by Dr. Cronwall, of the observations made over Sweden to determine the annual periods of the duration of ice. The six coloured maps, which illustrate the paper, showing, by lines passing through equal times and periods, the beginning, end, and number of days' continuance of the ice over the different districts of the country during the winters of 1871-72 and 1872-73, are valuable contributions to the climatology of Sweden. Their great value lies in illustrating in a precise as well as striking manner the influence of its adjoining seas, its lakes, its mountains and lesser elevations, and latitude, in determining the times of occurrence and termination of this element of the climate of Sweden. These discussions, begun by Dr. Hildebrandsson for the winter of 1870-71, cannot fail to be of great benefit to agricultural and other public interests.

SINCE our last issue we have received telegraphic intelligence of frightful floods and consequent loss of property in Texas. At Indianola the storm began on the 15th. The east wind which prevailed next morning increased to a gale. The water soon became six feet deep in the streets. On the 17th the wind veered to the north-west. The waves became chopped. The houses were washed away or tumbled down. Toward the morning of the 18th the wind lulled and the water receded; wind veered to the north. When daylight broke an awful destruction became visible. The town could not be recognised. The ruin was almost total. Seventy bodies were found in a brief period and buried. Men and women were discovered who had floated on doors or anything obtainable. Some were imprisoned beneath roofs. Hundreds had miraculous escapes. The loss of life may reach 200. Every business house but five has been destroyed. Every pilot but one has been drowned. The city of Sabine has been submerged and greatly damaged, but without loss of life. Matagorda, at the entrance of Matagorda Bay, has been swept away; but two houses are standing. Cedar Lake is also destroyed. All the inhabitants are reported lost at East Bay. In a village containing twenty-eight people, all but five are lost.

A CORRESPONDENT of the *Daily News*, writing from Christiania, says: "I translate the following from the *Finmarken-post*, a newspaper published in Europe's northernmost city—Hammerfest:—'On the 3rd instant arrived at Hammerfest the schooner *Regina*, Capt. Gundersen, belonging to the firm of O. J. Finckenhagen, from a voyage in the Arctic regions and the north coast of Nova Zembla. Capt. Gundersen discovered in Nova Zembla a journal, kept by the Dutch Arctic voyager, Barent, apparently giving an account of his doings from the 1st of June to the 29th August, 1580, as far as Capt. Gundersen was able to make out, being unacquainted with Dutch and Dutch writing of 300 years ago. The paper is in excellent preservation, and the writing distinct. Barent passed the winter 1596–97 in the Arctic regions. This journal, therefore, relating presumably to 1580, will give no information of his stay, but will, nevertheless, be of great interest.' "

WE learn from *Harper's Weekly* that the Kirtland School of Natural Sciences, established in Cleveland, Ohio, for summer instruction in natural history, concluded its course on the 9th of August last. The school consisted of twenty members, of whom thirteen were ladies, and lasted for five weeks, during which time gratuitous instruction was given by lectures and otherwise, and short excursions were made in connection with the subjects of study. Dr. Newberry, Prof. Theodore B. Comstock, Prof. Albert Tuttle, and Dr. William K. Brooks were the instructors. The operations of the school were mainly conducted by Prof. Comstock. Facilities were extended by railroad and steamboat companies in the transportation of the school and in various interesting excursions.

IN a recent number of the *Philadelphia American Times*, Dr. W. W. Keen proposes the employment of a solution of chloral as a preservative for objects of anatomy and natural history, its special advantage being said to be that the colour of objects is perfectly preserved, and all the parts retain their natural consistency, at the same time that no special precaution is necessary in stoppering the bottles containing the preparations. It is used by injecting it into the blood-vessels, or by immersion.

IN a recent number of the *Journal de la Société centrale d'Horticulture de France*, there is an article by M. Ch. Royer, " On the Causes of the Sleep of Flowers." The sleep of flowers has been attributed to various causes, including heat, light, moisture, dilatation of the epidermis of the inside of the perianth, contraction of the outside of the perianth, &c. The writer of the article in question endeavours to prove that expansion of the flowers in the morning is due to a turgescence of the parenchyma of the flower, brought about by heat, certainly; but the same agent indirectly causes the same flowers to close up again, after the disappearance of the swelling through evaporation. This, he contends, accounts for the early closing of flowers under a high temperature, or in dry soils. We have always understood that this phenomenon was governed by the hygrometrical conditions of the atmosphere.

THE *Revue des Eaux et des Forêts*, 1875, gives some statistics of the constituents of the forests of Denmark. The beech is now the most universal, having gradually succeeded in displacing the oak and pine. Next in order are the birch, alder, aspen, hazel, &c. Although at a very remote period pines appear to have formed the principal forests of Denmark, they are not now indigenous, nor have they been for many centuries; indeed, they do not thrive when introduced. According to the celebrated Danish geologist, M. Forchhausmer, the beech grows best in the formation which he calls *argile caillouteuse*, or *argiles à blocs erratiques*; whereas the oak prefers the *sable caillouteuse*, or *sable à blocs erratiques*. An examination of the vegetable remains in the bogs so common in Denmark reveals the fact that the earliest forests were composed of pines, followed by the sessile-fruited variety of the oak, now to a great extent superseded by the beech, &c. It is supposed that the pine forests flourished during the *âge de la pierre à éclats*; and the oak was at its greatest development at the commencement of the bronze age.

AMONGST the several ameliorations which are in preparation at the Ministry of Public Instruction in France, is the remodelling of the *baccalaureat* in a manner which is likely to benefit the study of medicine and the spread of the study of science. The *baccalaureat* of sciences is to be required as formerly from students in medicine; but after having passed a general examination for their first *baccalaureat* they will be examined in a second *baccalaureat* of *sciences physiques*, which includes not only physics, but general notions of botany, zoology, mineralogy, &c. The general *baccalaureat* is common to students in medicine and in mathematics, the students of the latter branch having to pass a special examination of their own entitled *Baccalaureat des Sciences Mathematiques*.

WE believe that the Belgian Government is about to establish tide gauges on the Escault, and to undertake complete researches on the tides and currents of the coasts of Belgium generally. Prof. Van Rysselberghe, the inventor of the self-recording meteorograph, to which we have already called attention, has been attached to the Hydrographic Department, with a view of aiding in these researches.

WE would direct the attention of our biological readers to a translation from the *Berliner Klinische Wochenschrift*, in the current number of the now monthly *London Medical Record*, of a paper by Dr. Scheele, of Dantzig, on two cases of complete transposition of the viscera, together with valuable observations and references on the subject generally.

AN interesting ceremony recently took place at Estagel, a small country town in the Department of the Pyrenees, where the great Arago was born. The local authorities and an immense number of people have celebrated the tenth anniversary of the erection of a statue of that astronomer. No scientific speaker was present, and Arago was merely eulogised in general terms for his science as well as for his patriotism.

THE vanilla plant has lately been attacked by a disease which has greatly interfered with its cultivation. Chemistry has been brought to bear in the production of a new substance from which the "vanilla essence" is produced. Messrs. Hartig and Kubel, two German chemists, have found in the *cambium* of conifers a species of resin which, after certain processes, produces an aroma exactly similar to that of the vanilla, and which possesses the same composition as that of the true vanilla essence itself. This *pseudo* vanilla is sold largely in Germany for the real article; its price is about two-thirds that of the true vanilla essence.

ON Tuesday last there was a private view of the works of the Westminster Aquarium and Winter Garden. From their unfinished state it was not possible to form an accurate idea of the contemplated arrangements, but the considerable area already occupied or to be covered with buildings struck everybody. At the luncheon subsequently given the Managing Director made a speech, in which much was said about science and intellectual enjoyment. Undoubtedly the Company will have a powerful engine at its disposal either for instruction or amusement.

NO. 3, vol. iv., of the Proceedings of the Geological Association, contains, besides pleasant descriptions of some excursions, the following papers:—" On the deposits now forming in British seas," by G. A. Lebour; " Notes on specimens of Phosphorate from the Department of the Lot, France," by F. W. Rudler; " A probable origin of the perforation in sharks' teeth, from the Crag," by H. A. Burrows; and " On the conditions of animal life in the Deep Sea bottom," by Dr. W. B. Carpenter.

THE additions to the Zoological Society's Gardens during the past week include two Bonnet Monkeys (*Macacus radiatus*) from India, presented by Mr. Turnbull; a Macaque Monkey (*Macacus cynomolgus*) from India, presented by Mrs. Knight; two Common Wolves (*Canis lupus*) from Russia, presented by Mr. Charles Bell; a Chinese Mynah (*Acridotheres cristatellus*) from China, presented by Mr. J. R. France; two Rattlesnakes (*Crotalus durissus*) from N. America, a Long-nosed Crocodile (*Crocodilus cataphractes*) from W. Africa, received in exchange; five Russell's Vipers (*Vipera russelli*) born in the Gardens.